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UNITED STATES PATENT AND TRADEMARK OFFICE

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 November 2001*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Claim Objections

1.   Claim 1 is objected to because of the following informalities: There are two steps

that labeled as (e) in lines 9 and 10.

Appropriate correction is required.

2.   Claim 11 is objected to because of the following informalities: Claim 11, line 1

states "The method of claim 11". Therefore Claim 11 depends from Claim 11 itself. For

purpose of examining, Examiner assumes Applicant intends to claim that Claim 11

depends from Claim 1.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

4.   **Claims 1-24** are rejected under 35 U.S.C. 103(a) as being unpatentable over

Marash U.S. Patent 6,198,693.

Regarding **claim 1**, Marash teaches a method of artifact rejection (see Fig. 6A,

and respective portions of the specification, col. 9, lines 16-32) comprising:

(a) receiving a signal (at block 61);

(b) picking noise component and a signal component (select minimum

signal power as noise power);

(c) calculating a noise power from the noise component (block 61);

(d) based on the calculated noise power, storing the noise component in

one of a plurality of noise buffers (selection schemes may be stored in computer

memory, col. 6, lines 60-62) and the signal component in a corresponding one of a

plurality of signal buffers (such as in 2 seconds);

(e) repeating steps (a) through (d) (i.e., over a predetermined interval such

as in 2 seconds);

(e') selecting noise buffer (i.e., block) having a lowest noise power (block

62);

(f) calculating a signal power from signal buffers corresponding to the

selected combination of noise buffers (i.e., over a predetermined interval such as in 2

seconds); and

(g) calculating a signal to noise ratio from the signal power and the lowest

noise power (block 63, Fig. 6A, col. 9, lines 16-32).

Marash does not explicitly disclose splitting the signal into a noise component and a signal component in order to pick the noise power; a combination of the plurality of buffers.

It would have been obvious to one of ordinary skill in the art at the time the invention was made, those of ordinary skill in the art when facing a design need of determining noise power would have recognized and would have split the signal; and a combination of the plurality of buffers taught by Marash into noise component and signal component as claimed for purpose of being computationally efficient, as suggested by Marash in column 3, lines 38-39.

Regarding **claim 2**, Marash further teaches the method of claim 1 further comprising counting the number of noise and signal components stored in each of the plurality of noise buffers and signal buffers, respectively (selection schemes may be stored in computer memory, col. 6, lines 60-62).

Regarding **claim 3**, Marash further teaches the method of claim 1 further comprising comparing the calculated signal to noise ratio to a predetermined value (block 64, Fig. 6A).

Regarding **claim 4**, Marash further teaches the method of claim 3 further comprising performing a function (e.g., validate) if the calculated signal to noise ratio is greater than the predetermined value (block 64, Fig. 6A).

Regarding **claim 5**, Marash further teaches the method of claim 3 further comprising performing a function (e.g., invalidate) if the calculated signal to noise ratio is greater than the predetermined value (block 64, Fig. 6A).

Regarding **claim 6**, Marash further teaches the method of claim 1 wherein the signal comprises at least one response to at least one stimulus (e.g., sound wave, col. 5, lines 34-44), and each stimulus comprises a plurality of points (sampling points col. 7, lines 18-22).

Regarding **claim 7**, Marash teaches the method 6. Marash further teaches using Fast Fourier Transform (FFT , col. 10, lines 52-62) unit. However Marash does not explicitly discloses wherein each stimulus comprises 1024 points.

It would have been obvious to one of ordinary skill in the art at the time the invention was made, those of ordinary skill in the art when facing a design need of performing Fast Fourier Transform would have recognized and would have calculated wherein each stimulus comprises 1024 points as claimed for purpose of being computationally efficient, as suggested by Marash in column 3, lines 38-39.

Regarding **claim 8**, Marash teaches the method 1. Marash further teaches calculating over a predetermined interval such as in 2 seconds (col. 9, lines 27-29) and selection schemes may be stored in computer memory (col. 6, lines 60-62). However

Marash does not explicitly discloses wherein each of the plurality of noise and signal

buffers respectively comprise eight buffer.

It would have been obvious to one of ordinary skill in the art at the time the

invention was made, those of ordinary skill in the art when facing a design need of

storage the values of noise power and signal power would have recognized and would

have selected wherein each of the plurality of noise and signal buffers respectively

comprise eight buffer as claimed for purpose of being computationally efficient, as

suggested by Marash in column 3, lines 38-39.

Regarding **claim 9**, Marash teaches the method of claim 1 wherein the method

is employed in one of a DPOAE test, a TEOAE test, a BAER test, an ultrasound

operation, an MRI operation, a RADAR operation, a GPS operation, an EEG operation,

an EKG operation, or a communications operation (video conference, col. 1, lines 13-

19).

Regarding **claim 10**, Marash teaches the method of claim 1 wherein splitting

the signal into a noise component and a signal component comprises taking the

discrete Fourier transform of the signal (Fast Fourier Transform FFT, col. 10, lines 52-

62).

Regarding **claim 11**, Marash teaches the method 1. Marash further teaches

calculating Fast Fourier Transform FFT, a set of frequency bins for storing the

frequency representation values divided into a set of frequency bands (col. 10, lines 52-

62). However Marash does not explicitly discloses wherein seven different frequencies

are employed.

It would have been obvious to one of ordinary skill in the art at the time the

invention was made, those of ordinary skill in the art when facing a design need of

calculating the frequency representation values would have recognized and would have

selected wherein seven different frequencies are employed as claimed for purpose of

being computationally efficient, as suggested by Marash in column 3, lines 38-39.

Regarding **claim 12**, Marash further teaches the method of claim 1 wherein the

signal comprises one of at least one stimulus or at least one response to at least one

stimulus (e.g., sound wave, col. 5, lines 34-44).

Regarding **claim 13**, Marash further teaches the method of claim 1 further

comprising discarding the signal if the noise power of the noise component does not fit

within an acceptable range of any of the plurality of noise buffers (block 64, Fig. 6A; see

Abstract).

Regarding **claim 14,** this claim has similar limitations as Claim 1. Therefore it is

interpreted and rejected under Marash for the reasons set forth in the rejection of Claim

1.

Regarding **claims 15-20,** these claims has similar limitations as Claims 2, 3, 4, 5,

2, 13 and 12, respectively. Therefore they are interpreted and rejected under Marash

for the reasons set forth in the rejection of Claims 2, 3, 4, 5, 2, 13 and 12.

Regarding **claims 21-24,** these claims has similar limitations as Claims 1, 13.

Therefore they are interpreted and rejected under Marash for the reasons set forth in

the rejection of Claims 1 and 13.

Double Patenting

5.   The nonstatutory double patenting rejection is based on a judicially created
doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the
unjustified or improper timewise extension of the "right to exclude" granted by a patent
and to prevent possible harassment by multiple assignees.   A nonstatutory
obviousness-type double patenting rejection is appropriate where the conflicting claims
are not identical, but at least one examined application claim is not patentably distinct
from the reference claim(s) because the examined application claim is either anticipated
by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg,* 140
F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman,* 11 F.3d 1046, 29
USPQ2d 2010 (Fed. Cir. 1993); *In re Longi,* 759 F.2d 887, 225 USPQ 645 (Fed. Cir.
1985); *In re Van Ornum,* 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel,* 422
F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington,* 418 F.2d 528, 163
USPQ 644 (CCPA 1969).
        A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d)
may be used to overcome an actual or provisional rejection based on a nonstatutory
double patenting ground provided the conflicting application or patent either is shown to
be commonly owned with this application, or claims an invention made as a result of
activities undertaken within the scope of a joint research agreement.
        Effective January 1, 1994, a registered attorney or agent of record may sign a
terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with
37 CFR 3.73(b).

6.   **Claims 1-9, 10-11, 13, 14-19, and 21** are rejected on the ground of nonstatutory

obviousness-type double patenting as being unpatentable over **claims 1-9, 11-12, 13,**

14-19, and 20, respectively, of U.S. Patent No. 6,221,164. Although the conflicting

claims are not identical, they are not patentably distinct from each other because:

For independent **claim 1** of the instant application, Applicants merely broaden

the scope of U.S. Patent No. 6,221,164 by: eliminating the step "(a) transmitting a

stimulus into an ear canal of a subject" of claim 1, line 3; and replacing "response to the

stimulus from the ear canal" of claim 1, line 4 by "signal" (instant application claim 1, line

2);

For independent **claim 14** of the instant application, Applicants merely broaden

the scope of U.S. Patent No. 6,221,164 by eliminating the step "(a) transmitting a

stimulus into an ear canal of a subject" of claim 14, line 3; and replacing "response to

the stimulus from the ear canal" of claim 1, line 4 by "signal" (instant application claim

14, line 2);

For independent **claim 21** of the instant application, Applicants merely broaden

the scope of U.S. Patent No. 6,221,164 by eliminating the step "(a) transmitting a

stimulus into an ear canal of a subject" of claim 20, line 3; and replacing "response to

the stimulus from the ear canal" of claim 1, line 4 by "signal" (instant application claim

21, line 2).

It has been held that the omission of an element and its function is an obvious

expedient if the remaining elements perform the same function as before. In re Karlson,

136 USPQ 184 (CCPA). Also note Ex Parte Raine, 168 USPQ 375 (bd. App. 1969);

therefore omission of a reference element whose function is not needed would be obvious to one skilled in the art.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Con P. Tran whose telephone number is (571) 272-7532. The examiner can normally be reached on M - F (8:30 AM - 5:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor Vivian C. Chin can be reached on (571) 272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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